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BUREAU OF PLANT INDUSTRY

WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

Not for publication without
prior consent of this division.

REPORT FOR THE WEEK ENDING June 1, 1935.

HAVRE:

The past week was cool. There were two showers totalling 0.38 inch, but on two or three other days the weather was threatening. General growing conditions are very good, although trees and shrubs are backward. All grains and grasses are growing rapidly with winter rye beginning to head, and early native grasses heading. Summer fallowing is generally well along in this part of the State. Alfalfa and crested wheatgrass seeded in commercial fields the first of the week are germinating rapidly. During the last two or three weeks there has been some loss of livestock from plant poisoning. Death camas made an early growth and were ahead of grass. This has resulted in an occasional loss.

Visitors for the week were L. C. Hurtt in charge of Experimental Grazing work at the U.S. Range Station, Miles City; Dr. S. E. Clarke, Agrostologist, Dominion Range Station, Manyberries, Alberta; and G. Allen Mail, Entomologist, Montana Experiment Station, Bozeman.

Climatic data for May - Mean monthly temperature 50.5°; precipitation 1.69 inches.

Maximum temperature, 74°; minimum, 33°; precipitation, .38 inch.

JUDITH BASIN:

With higher temperatures all crops have made their best growth of the season during the week just closed. Spring grains are looking good, some of the early seeded spring wheat being almost as large as much of the winter wheat. The condition of the latter crop over much of the Judith Basin is none too favorable at this date. Over 75 percent of the fields are heavily infested with fanweed and various species of the mustard family. The covering of weeds is so dense on many fields that no wheat can be seen above the weeds. Much of the wheat is only 3 or 4 inches high and appears to be quite weak. The handling of such fields is a problem, although most farmers are leaving them in the hopes that with favorable weather a crop may be harvested. Needless to say all fields are going to be seeded down with a good crop of weed seed that will prove a problem for many years.

The heaviest rain of the year occurred yesterday afternoon when 0.85 inch fell in about 20 minutes. There was some hail with the storm but it was not in sufficient amount to cause any damage. The moisture came just in time, as lands on which there is a heavy growth of vegetation were becoming dry and hard.

Maximum temperature 70°; minimum, 31°; precipitation, .85 inch.

HUNTLEY:

Weather and soil conditions throughout the week have been favorable for field work and growing crops. Fall grains and grasses have made the greatest progress, but spring sown grains with the exception of flax have also made advancement. Flax stands are spotted, due to the young plants being held under surface crust resulting from heavy rains and dying. Stands of seedling grasses were also thinned from the same cause, and some replanting may be necessary. Field work has consisted of planting corn, duckfoot-cultivating and harrowing roads and miscellaneous fallow plots. Weeds have made a heavy growth this season as a result of the favorable rainfall and the inability to cultivate them while small because of wet soil.

The total rainfall for May was 2.91 inches whereas the average for this station is 1.99 inches.

Maximum temperature, 73°; minimum, 34°; precipitation, 0.02 inch.

SHERIDAN:

Except for a part of one day, weather conditions remained cool and cloudy with several light showers. Crop growth continues slow. Winter rye began to head early in the week, and crested wheat grass is now showing a few heads. Corn planted May 8 emerged the last day or so. The continued light showers kept the crust which formed after the heavy rains sufficiently soft so that flax finally has emerged with a fair stand on all plots.

The remainder of the garden plants from Cheyenne were planted early in the week. The cloudy weather was quite favorable for them and losses were light, a part of the losses being by cutworms. Proso, millet, Sudan grass, and sorgo were sown, seeding of these crops being completed today. Corn planted before the rain was gone over with the rotary hoe to break the exceptionally heavy crust which formed over the rows, where packed by the planter.

The mean temperature for May was the lowest yet recorded here, about 49°. Rainfall for the month was 3.65 inches, 1.10 inches above the station average, but making a total of only 0.35 inch over the yearly average to date.

Maximum temperature, 69°; minimum, 38°; precipitation, 0.33 inch.

DICKINSON:

Precipitation in May on 19 days amounted to 2.77 inches. Total precipitation, January - May, 1935, 6.80 inches.

The mean temperature in May was 47°. This is the lowest mean temperature during the 28 years of the work of the division at this station, with the exception of May, 1924, when the mean was 45°. In May 1934 the mean was 63° with a maximum of 102° on the 30th. The maximum this year was 71° on the 30th. Although the mean temperature was exceptionally low, no frost damage resulted at the station during the month.

Blossoms opened on a few more of the plum varieties. Most of the plums, apples, and crabs have not yet bloomed. Nearly all varieties have a normal amount of bloom. The drought apparently did not seriously affect most of the fruit trees.

Grains and grasses made rapid growth during the week. Corn, alfalfa, sweet clover, and miscellaneous other crops are all emerging with full stands. The outlook is in marked contrast to a year ago at this date when extreme drought and heat had prevented full stands of nearly all crops from emerging.

Fallow was plowed on the main field on May 31. The plots were lined up and staked. Most of the perennial crops in rows were cultivated during the week.

Colonel Paul S. Bliss, District FERA supervisor, of Williston, visited the station.

Maximum temperature, 71°; minimum, 33°; precipitation, 0.77 inch.

MANDAN:

Agronomy - The past week has been favorable for field work. Light showers fell on 2 or 3 days during the week. Corn that was planted on May 18 is up to good stands. Plots were trimmed and all plots for fallow were plowed. Small grain is growing well and appears to be in good condition. More grass plots were seeded for the Soil Conservation Service, and terracing was started below the large hill.

The month of May was cool throughout with frequent rains. The total precipitation for May was 2.63 inches, 1.95 inches during the first half and 0.68 during the last half.

Maximum temperature, 70°; minimum, 40°; precipitation, 0.42 inch.

Cooperative Grazing Experiment - Plowing of about 12 acres of the old bromegrass pasture will be completed today. Native vegetation is making a slow growth, but it showed much improvement during the week. Blue grama grass is starting growth in spots that looked dead sometime ago, but growth is slow and the stand is far from normal at the present time. Koeleria cristata and Stipa comata which are usually common on the prairie are difficult to find at the present time. Carex filifolia is furnishing a large percentage of the pasture feed at present.

The steers were weighed, divided, and started on the pastures about two weeks later than normal. Prof. E. J. Thompson, Chairman of the Department of Animal Husbandry of the North Dakota Agricultural College, was here on May 31 and graded the steers. They are not as good as the steers that have been used for the past 3 or 4 years. The average weight of the steers when started on pasture was 821 pounds. This is the heaviest bunch ever used in the experiment. The 30 and 50 acre pastures will not be grazed this season.

Crested wheatgrass is now in prime condition for grazing. It is about 8 inches high.

Dr. Brandenburg, State Veterinarian, and Dr. Berling, B.A.I., were at the pasture and inspected the steers.

Horticulture - Hand crossing of plums and other fruits in the field has been in progress throughout the week. Cool weather has prolonged the period of bloom, giving a better chance to make a good number of field crosses. Native fruits and some of the plum hybrids and apples are showing a heavy bloom.

All plantings of vegetables are up with a good stand. Radishes spinach, asparagus, and rhubarb are in season and of good quality. Bedding plants were set out on the grounds during the week. The lawns are still in good condition, and shrubs, tulips, and other perennials are starting to bloom very freely.

Arboriculture - The clearing of brush has been completed during the week. Cultivation has commenced in the various blocks. Hoeing has started in nursery fields. Weed growth has not been particularly bad up to the present time, but the surface of the soil is now commencing to look green with small weeds. Tree seedlings are making only slow progress, the soil apparently being too cold for much growth.

H. J. Clemmer and H. E. Engstrom, Soil Conservation Service, Huron, S. Dak., Prof, E. J. Thompson, N. Dak. Agricultural College, and High School classes from Edgeley, N. Dak. and Carrington, N. Dak. visited the station during the week.

BELLE FOURCHE:

Cool, cloudy weather prevailed throughout the week, and precipitation was of frequent occurrence. A substantial rain of over two days duration commenced May 30, and 1.57 inches precipitation was recorded by the morning of June 1, but about half of this amount was received in a heavy downpour the afternoon of May 31. As the surface was already well filled with moisture, considerable run-off occurred, and slight damage was caused to a few plots by the flood waters. Heavy rains were general throughout this region and all streams were swollen, washing away bridges and railroad tracks in a few instances.

A total of 4.72 inches precipitation was received during May which is 1.72 inches greater than the 27-year average for the month. The mean temperature for the month was 49 °, which is the lowest of record for May at this station. The lack of sunshine during May is

indicated by the fact that only two days were classed as clear, and thirteen days as partly cloudy.

Grasses and small grains have made fair progress, but all other plant growth has been quite backward, owing to the continued abnormally cool, cloudy weather. Apple trees are just blossoming, and none of the trees in the orchard, forestry, or ornamental plantings are out in full leaf. Flax is up on the rotation plots, but the stands were injured to some extent by the heavy rain on May 31.

Maximum temperature, 69°; minimum, 39°; precipitation, 1.93 inches.

ARCHER:

During the past week the weather was cool and very wet. The total precipitation was 4.67 inches. Precipitation was recorded every day of the week and on May 28 and 31 the recordings were 2.80 and 1.16 inches, respectively. The saturated condition of the soil caused severe run off, and flood conditions were prevalent with considerable loss of life. The total precipitation for May was 7.63 inches, or 0.41 inch more than occurred during the growing season of 1934 and 0.95 inch less than the total for 1934. Precipitation was recorded 25 days during May. To date the total precipitation for the year is 11.00 inches.

Vegetative growth was slow. The prairies have a coat of green, but the growth is short and watery. Work at the station has for the most part consisted of caring for conditions occasioned by the wet weather. Tree planting will be finished to-day. A few small pieces of land remain to be seeded to small grains, and all the corn is yet to be seeded. Field work cannot be undertaken until several days after the weather clears.

Director W. L. Quayle visited the station May 29.

Maximum temperature, 76°; minimum, 36°; precipitation, 4.67 inches.

AKRON:

The past week has been one of heavy to torrential rains over Eastern Colorado, with greatest near by intensity centering over Logan, Sedgwick, and Phillips counties.

The sky remained over-cast from last week end until Monday afternoon when a cloud approached from the west driving teams and workers from the field. This storm appeared to be covering a wide strip of territory. It was accompanied by a very minimum of sharp lightning and had only a short period of moderately intensive fall, after which it settled into a drizzle to continue well through the night. There was practically no run-off from this 0.74 inch of rainfall. Tuesday was cloudy and misty with a measurable amount of precipitation for the 24 hour period. Wednesday opened clear with scattered cumulus clouds, and again offered hope that the weather would clear so that timely seeding could be attended to. This hope did not materialize, however, for a southeast wind Thursday brought a heavy rain of 1.55 inches that night, accompanied by sheet lightning and rolling thunder, which caused the first serious run off of the present season.

Rotation plots were first fit enough Monday, and those to be seeded to corn and sorghum were spring tooth harrowed to eliminate emerging weeds. This work was practically finished by the time the team was driven from the field late in the afternoon. The seeding of increase corn and the plowing of the forage series was completed. No other field work was possible.

Conservative estimate is that not over $\frac{1}{4}$ the expected corn acreage has as yet been seeded in this immediate section of Colorado. Station records show liklihood of soft, immature corn when seeded after June 5.

There was precipitation on 19 days in May for a total of 7.41 inches. This has been exceeded only by that of 7.79 inches in May, 1917. This brings the total for the present year to 12.12 inches.

Maximum temperature, 75°; minimum, 42°; precipitation, 2.55 inches.

NORTH PLATTE:

The last week of May was a continuation of weather conditions that had prevailed during the month. Notwithstanding the Weather Bureau's announcement of an 11-month cycle and high temperature, May at North Platte was the coldest and wettest of record. A mean temperature of 51° was 7° subnormal and 18° below May of 1934.

Rains for most of the month came slowly, and but slight loss or damage from run-off resulted. During the past few days, however, heavy downpours on an already saturated soil have supplied conditions for almost complete loss from run-off, very heavy damage from soil erosion, washing out and covering up of crops, swollen streams, and much highway and property damage.

About one-fifth of the corn has not been planted, and probably more than half of that now planted will have to be replanted. Winter wheat is in the boot and lodging is prevalent in low spots. Conditions are ideal for heavy rust injury. Native grass has made a remarkable recovery from the drought injury of last year, and pastures and meadows are excellent.

Maximum temperature, 75°; minimum, 30°; precipitation (table gauge) 8.19 inches; normal, 2.78 inches; since January 1 - 14.18 inches.

COLBY:

This was another cool and rainy week. It was cloudy nearly all the time, and small amounts of precipitation were recorded every day. The last two days have been windy with some soil blowing in places. Yesterday afternoon was windy and dusty, until the dust was settled by a hard shower. It was only a local shower, however, and the wind continued, soon filling the air with dust again. We have not had the hard rains which have caused floods in some sections of the central Great Plains.

The spring small grains are up to excellent stands now and are growing nicely. Corn planted last week is sprouting. Weeds are coming thickly everywhere. Pastures are greening up slowly.

May, 1935, was the coolest May on record at this station.

Maximum temperature, 87°; minimum, 41°; precipitation, 0.61 inch.

Precipitation for May, 2.92 inches; for January - May, 3.85 inches.

HAYS:

Rainy weather has continued throughout the week. On account of wet soil very little tillage work could be done. Most of May tillage work remains to be done. Winter wheat is about 30 per cent headed. Barley, oats, and spring wheat are looking fine but have made very little growth since the last report. Peas are up to a good stand and look promising. Winter rye (seeded for green manure) of which 98 per cent perished during the drought is headed, but the ground has been too wet to plow since early in the month. Since the rains have commenced, pastures and most fields even though without a crop look green from the

roadside. In many cases, however, much of the greenness is due to a crop of weeds just starting. Despite the rains and the change in the general appearance of the country, soil blowing could be seen in three directions from the experiment station yesterday.

Maximum temperature, 86°; minimum, 52°; precipitation, 1.67 inches.

GARDEN CITY:

Spring tillage operations and spring planting is progressing as rapidly as possible throughout southwestern Kansas. Several rains varying from small showers in some localities to cloudbursts in other sections have hampered field work progress. On the station all plots are in good condition for planting. Corn was planted May 31, but a rain accompanied by high wind in the afternoon of the same day may necessitate replanting the listed plots. The sorghums will be planted as soon as the ground is dry enough.

Maximum temperature, 88°; minimum, 53°; precipitation, 1.27 inches.

Precipitation for May was 3.76 inches. This is 1.26 inches above normal, the most for one month since August, 1933, and the most for May since 1928.

TUCUMCARI:

Rapid progress was made throughout the week in preparing and planting Dry-Land and cooperative plots. One rotation field remains to be planted, and no increase plantings have been made. The balance of cooperative plots will be planted as their respective planting dates arrive. The weather has turned suddenly warmer, with a continuation of steady, drying winds. Until the past week May was the coldest and lowest in evaporation of any May on record. Evaporation the past week has been unusually high, due to warmer temperatures and high wind movement.

Ranges are improving daily, and much wheat which was thought to be past recovery now promises to make from a poor to a fair yield. The change in 25 days in this locality seems beyond belief, the increased spirits of the inhabitants being nearly as astounding as the improvement in ranges, crop prospects, and the general appearance of the landscape.

Many farmers who planted as soon as the snow of early May had melted will find considerable replanting necessary. Station corn planted May 16 emerged May 27. Cotton planted the same time still shows some deficient rows. Peanuts planted one day later still show less than one-half stand in some instances. No station sorghums were planted until May 27, and these show good stands today. Farmers' fields nearby, where planting of sorghums was performed from May 10 to 15, still are bare, with no doubt most of the seed rotted.

Maximum temperature, 90°; minimum 53°; precipitation, none.

DALHART:

The first seasonal planting of the year was done during the week. The plantings consisted of rotation plots of corn, beans, peanuts, and soybeans, variety plots of grain and forage sorghums, corn varieties, and cotton varieties. As no additional moisture was received during the week and rather high winds prevailed at times, it is considered doubtful if the seedings made towards the last of the week can emerge. Planting on surrounding farms is now well started and is the first seasonal plantings made in three years.

D. A. Savage of the Hays, Kans., station arrived Saturday with a party of 10 assistants to chart injury to the different native grasses

on the various soil types and classes in this vicinity.

Maximum temperature, 89°; minimum, 53°; precipitation, 0.13 inch.

BIG SPRING:

A hard, dashing rain of 1.09 inches was received on the night of May 31, which made a total of 4.60 inches for the month of May as compared with a normal 2.67 for the month. Apparently this rain did not damage the Station crops. Some farmers in the county report that they received much heavier rains, which will necessitate replanting for the third time. Station crops that were planted after the last big rain have practically all emerged to good stands. The chief concern now will be to protect them from sand blowing damage. This rain will slick the soil over to such an extent that it will be in ideal shape to start moving with very little wind. Until this crust can be broken, there is always danger of losing a crop, most especially cotton, on very short notice.

The June 1 date of planting grain and forage sorghums and cotton was made during the week. A number of extra plots as well as considerable increase milo was also planted. Other work consisted of knifing beds and center furrowing to prevent soil blowing.

Maximum temperature, 96°; minimum, 61°; precipitation, 1.26 inches.

LAWTON:

Precipitation on four days amounted to 1.68 inches and permitted only two days of field work. Hail and a high wind that accompanied a rain of 0.54 inch on the 28 completely destroyed a good many fields of wheat and oats in the southwestern and in the southeastern parts of the county. Territory ravaged by the storm was very spotted and irregular.

Hail damage to the wheat varieties on the west end of the station ranged from 2 to 50 per cent, depending upon the variety. Early maturing varieties that were nearly ripe suffered the heaviest injury. Grain on such varieties was beaten out of the head. Damage to the later varieties consisted mostly of broken culms, and it may be that injury to these varieties will be greater than is estimated at present. Early Blackhull and the Kanred x Hard Federation selections are ripe. Rotation plots of wheat and oats located about ½ mile east of the wheat variety project were only slightly damaged by hail, and row crops on the east end of the station escaped hail injury entirely.

Field work on the first two days of the week made it possible to prepare seed beds and replant several plots of sorghums and to complete preparation of seed beds for all of the cotton plantings. All the cotton ground will now require further tillage before planting.

Cotton planting throughout the county has been sharply restricted by wet weather throughout the entire month of May. Replanting is very extensive wherever earlier plantings were made. Early plantings that survived have made but little growth.

Results from the date-of-planting tests at this station for a period of 10 years indicate that about an 18 per cent reduction in yield is an average expectancy from June 1 plantings as compared with the averages from May 1 and May 15 plantings. This reduction in yield will vary from 5 to 30 per cent, depending upon the variety of cotton grown. If the delay in planting is extended to June 15 the reduction in yield will approach 40 per cent, except under very favorable summer and fall conditions.

Crop and field observations made in the southwestern part of Comanche county and over the southeastern part of Tillman county, on June 1, revealed many fields of good wheat and oats, especially in Tillman county, where Blackhull wheat is raised so extensively. The first carload of wheat marketed in Oklahoma has for several years come from this section. Harvest appears to be about 10 days late this year. Wherever the ground was dry enough to work farmers were busily engaged in planting cotton, and the fields were predominately weedy.

Rainfall was recorded on 18 days in May and amounted to 8.92 inches.

Maximum temperature for month, 87°; minimum, 41°.

Station visitors during the week include E. F. Chilcott and O. R. Mathews, Woodward, Okla., B. F. Kiltz, Stillwater, Okla., Dr. Karl Quisenberry, Washington, D. C., and Dr. F. A. Fenton, Stillwater, Okla.

WOODWARD:

From May 12 to 30 there was at least a trace of precipitation every day, and the weather has been generally cool and cloudy. The total rainfall for the month was 7.17 inches, most of it coming between the 12th and 18th.

A more definite reading is possible on wheat at present than at any time previous. That on hard land shows a great many short, slim heads on short straw. That on sandy land shows a thinner stand but great deal better developed heads. The former may average 3 to 4 bushels per acre, the latter 6 to 8. The hard-land fallow wheat for some reason does not give the promise it did several weeks ago, probably because rains did not come early enough to develop good heads.

Alfalfa was cut just before rains started, giving a very light crop. It has flourished since rains started and will soon be ready to cut again andwill give a heavy yield.

Many farmers have already planted their sorghums, which are for the most part up to good stands. There will no doubt be considerable late planting of sorghums on land on which wheat has proved worthless, in case good rains occur in June. No doubt much of the abandoned wheat acreage will be worried into shape over the summer for planting to wheat again next fall. Early preparation has fallen off drastically since lack of funds has limited farmers ability for cultivation over the summer.

There has been a considerable increase in cotton acreage on land which failed to produce wheat. Seed was poor, and stands are not good.

Trees are putting out a heavy leaf growth, and evergreen trees are making more growth than usual.

Work of week has consisted of grading roads, cleaning ditches, and getting the greater part of the land ready for planting.

Mr. Savage spent a day and a half here with a crew of ten men studying native flora. Mr. Quisenberry of the Cereal Office spent two days studying the wheat varieties.

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REPORT FOR THE WEEK ENDING JUNE 8,1935.

HAVRE:

The week was characterized by cool weather and a freezing temperature of 31° on June 5, which is a new low record for this station. The low temperature apparently caused very little damage, except in localities where tender garden plants such as potatoes, tomatoes, and vines were damaged. There was very little damage on the station even to corn, which is just coming up nicely. Native grasses, winter grains, and early spring grains are growing rapidly. Flax is well advanced for this season of the year, and first cultivation of corn is in progress. Shrubbery is very much slower than usual. Chokecherries bloomed during the week, and very few of the leaves are full size as yet. At an altitude of 5,000 feet in the Bear Paw Mountains practically no trees have started to leaf. Alfalfa fields under the ditch are being irrigated the second time. Alfalfa has made a very thick growth, but it is probable that haying will be a week or ten days later than usual. Indications are now that there will be a heavy first cutting.

Gophers did not appear numerous early in the spring, but they are very thick now and are being poisoned. Grasshoppers have hatched and in small areas especially under irrigation seem to be quite thick. The general grasshopper situation this year will probably not be serious.

Maximum temperature, 80°; minimum, 31°; precipitation, 0.25 inch.

JUDITH BASIN:

All crops have made a good growth following the rains of a week ago. Winter wheat made its best growth of the season, and in those fields which are free from weeds it looks promising. All spring seeded small grains are also in good condition. Crested wheatgrass is in the boot, and other grasses have made a good growth. Trees are leafing out very slowly, the Caragana, boxelder, and poplar being the only ones that show many leaves to date.

Maximum temperature, 73°; minimum, 33°; precipitation, 0.37 inch.

HUNTLEY:

Good growing weather has prevailed throughout the week, although most of the nights have been cold. Rain has threatened almost daily, but only two light showers have been received. Winter wheat and rye have stooled heavily, and the latter crop is well headed out. Spring-sown small grains have made marked advancement during the last two days, which have been quite warm. Corn is up to the extent that the rows are discernible, but stands are not yet complete.

Field work has consisted of plowing for fallow, cultivating roads, and cutting the bulk alfalfa in field G. This was done to control weed growth, especially downy bromegrass, which had come up thickly where the alfalfa stands were thin.

Maximum temperature, 79°; minimum, 33°; precipitation, 0.12 inch.

SHERIDAN:

The weather continued cool and cloudy over the most of the week, but with two days with temperatures above 70°. Grass and fall grain made a good growth, and spring grain apparently has begun to make more growth than at any time previously this spring. Growth of alfalfa still continues slow, but most fields look better than at any other

time this spring. In many fields where the alfalfa was slowest in starting, downy bromegrass has made a heavy growth.

Flax in the June 1 seeding, Sudan grass sown the last of May, and most of the corn have emerged with fair stands. Corn sown after the heavy rain emerged ahead of that on spring plowing planted before the rain.

Maximum temperature, 72°; minimum, 38°; precipitation, 0.33 inch.

DICKINSON:

The fore part of the week was cool and cloudy with light frost reported in low places. The last two days were clear and much warmer with the maximum of 81° recorded about noon today. Growth of small grains and grasses has been satisfactory, though not rapid because of the cool weather. Warm season crops of garden and field are backward. Most of the apple and crab varieties are now in full bloom, about three weeks later than average. Tulips are in bloom. The flowers of neither common nor Persian lilacs have yet fully opened. The orchard and most of the trees were cultivated during the week. A patch of bromegrass which was killed out severely during the winter was plowed and planted to Gehu corn.

A meeting of the Grasslands Committee of the National Research Council was held in Dickinson June 2 and 3. A session of the committee was held at the station on June 2. Field trips were taken to the Medora and Killdeer Mountain areas. Members of the committee who attended the meeting were:

Dr. V.E. Shelford, Zoologist, University of Illinois
Dr. Herbert C. Hanson, Botanist, N.Dak. State Agr. College
Dr. Walter P. Taylor, Biologist, U.S.Biological Survey, Tucson, Arizona.
Dr. B.C. Tharp, Botanist, University of Texas, Austin, Texas
Dr. J.E. Weaver, Ecologist, University of Nebraska, Lincoln, Nebraska.
Dr. A.O. Weese, Zoologist, University of Oklahoma
Dr. B. Shimek, Department of Botany, University of Iowa
Dr. K.M. King, Entomologist, University of Sask, Saskatoon, Can.

Other visitors were Dr. J.R. Parker and Robert Shotwell of the Bureau of Entomology and P.J. Olson, Assistant Director, North Dakota Experiment Station.

Maximum temperature, 81°; minimum, 35°; precipitation, 0.37 inch.

Precipitation, January 1 to date, 7.68 inches.

MANDAN:

Agronomy - The weather of the week was characterized by temperatures below normal, with cloudiness and high winds during the first part. Some soil blowing accompanied the high winds. The first cultivation for corn was started on the 6th, shortly following emergence. Good stands were obtained from all plantings of corn, and thinning in the rotation plots has been completed. Millet varieties for hay and seed were seeded on the 8th. This is about a week later than the usual date. The general condition of grains in the rotation plots is much better than it has been for a number of years. Corn shows some retarding from continued cool weather. Cultivation of alleys was completed on the 7th.

Maximum temperature, 71°; minimum, 36°; precipitation, 0.68 inch.

Horticulture - Vegetables now harvested include asparagus, rhubarb, spinach, radishes, and green onions. All plantings are now up with a fair stand. Sweetcorn is backward and seemingly suffering from the cold weather prevailing during the spring. 3,900 tomato plants inthe breeding project were set out June 4. Precipitation followed on the 5th, and a good stand is apparently secured. Sweetcorn selections are beginning to germinate, as are also watermelon and muskmelon selections in their respective breeding projects. There is some damage to melons from striped gophers and birds. All vegetable plots were cultivated and weeded during the week.

The groups on the grounds are being cultivated and pruned. There is considerable winter injury among viburnums and syringas, especially in out-lying groups where but little extra watering was applied last season. Shrubs in bloom at the present time include Spirea arguta, Ribes odoratum, Hopa crab, and lilacs in variety. Persian lilacs are again outstandingly beautiful, being simply smothered with blossoms. Darwin tulips planted last fall seem unusually fine, due perhaps to the cool weather prevailing. 125 lily bulbs, including Regal and Hanson, were planted among the perennials during the week. The hardy chrysanthemum selections received from Mr. Mulford, Washington, D. C., came through the winter 100 per-cent and are making a vigorous growth this spring. They were very fine last fall and should do even better this season.

Arboriculture - Cultivation and hoeing has been done in the windbreaks, seedling tree nurseries, and fields. The planting of elm seed has been completed. Old frames for the seedling nurseries have been repaired and a number of new frames constructed.

Visitors for the week included Dr. J.R. Parker, Bureau of Entomology, Prof. P.J. Olson, and Prof. J.A. Munro, North Dakota Agricultural College.

BELLE FOURCHE:

An additional 0.27 inch precipitation was received in the rain which commenced during the latter part ofthe previous week, making a total of 1.84 inches for the entire storm. Light showers occurred on June 3 and 5, with some hail on the latter date. The weather continued abnormally cool and cloudy, but the sky cleared the evening of June 6, and a white frost occurred the following morning. This is the latest in the spring that a temperature of 32° has been recorded at the station, but, as the temperature was at the freezing point for only a very short time, no damage was done to crops or plants in the immediate vicinity.

The cool weather has been favorable to the tillering and growth of small grain. Winter rye stubbled in after fall wheat is much further advanced than on any of the other cultural treatments and is fully headed, having an average height of 42 inches. Winter wheat has made satisfactory recovery from the injury caused by soil blowing earlier in the year and is making good growth. Soil samples show that the moisture has penetrated to an average depth of 20 inches on continuously cropped grain plots.

Maximum temperature, 68°; minimum, 32°; precipitation, 0.36 inch.

ARCHER:

Owing to the continued wet weather, farm work on tilled land stopped May 11 and was not started again until June 3. During the first part of the week work was slow and disagreeable, due to the wet soil and cold, misty weather. Plantings in the rotation plots are now up to date. The seeding of increase plots and the dairy fields is in progress. The protracted cold wet weather and lack of feed made livestock losses heavy during May. The warm sunshine of the last two days has been welcome, and vegetation is responding

Director W.L. Quayle and H.S. Curtiss, landscape artist of the Universtiy of Wyoming, visited the station June 5. L.F. Locke and E.W. Johnson of the Woodward station visited the station June 6.

Maximum temperature, 70°; minimum, 34°; precipitation, 0.11 inch.

AKRON:

The week has been open and favorable for field work, with but one cold, misty day to interfere with the warming of the soil sufficient for the successful germination of the row crops. Soil was a little heavy the first of the week, and was very tight from the heavy rainfall of May.

Corn planting was completed early in the week, including the rotation, the rate and spacing, and the variety plots. Rotation plots were so tight and heavy that the furrow openers on the planter made no impression whatever, and covering was not altogether satisfactory. These plots were immediately spring tooth harrowed to create better surface tilth and to add to the meager covering of the grain. Beans and sorghum were planted on the rate and spacing project and on the rotations this week end. Corn planted before and during the rainy period was harrowed to break the crust and to create better tilth in the bottoms of the furrows over the grain. Corn on the nursery ground, among the earliest planted, shows partial stand by this week end. Experimental plot trimming and the working-out of the roadways was completed. Orchards and border tree plantings were cultivated. Extra men spent considerable time in the cereal nursery. With tractor and duck foot, tractor and plow, the spring tooth harrow, the planter, and the lister in the field all week, great progress was made toward getting this station abreast of current field work.

Barley is practically ready to break into head. All spring seeded small grain plots are vigorous, and thrifty.

Persian Yellow Rose and Spirea Van Houttei are breaking into full bloom by this week end.

Maximum temperature, 80°; minimum, 39°; precipitation, 0.11 inch.

NORTH PLATTE:

Cool, wet weather has continued. Field work has been possible on only two days. Rain on two days fell gently, and there was no further damage from flooding. The Platte rivers have been very high but no serious damage was done in the immediate vicinity of North Platte. Further west it was necessary to dynamite the fills on several bridges. In the Republican Valley, where the worst flood damage in the history of the State occurred, reconstruction is now well under way. All available men have been sent from North Platte.

First heads of winter wheat are appearing. Much corn remains to be planted and replanted. Some plants emerged during the week, but these are poor in color and weak in growth. Chlorosis spots

are appearing on the lawns and even in the alfalfa fields. The need of sunshine and higher temperatures is a far cry from the scorching drought of a year ago.

Maximum temperature, 81°; minimum, 38°; precipitation, 0.71 inch. Total for year to date, on table 14.89 inches.

COLBY:

This has been another cool week. Rain was recorded on only two days, but it was cloudy much of the time. With no more rain than we have had, it is hard to realize that there has been so much rain in nearly all directions as to stop practically all railroad and highway travel, except for short distances, for nearly a week. While there have been no dust storms, there has been occasional soil blowing on scattered fields in this vicinity.

The weather was ideal for field work. The seeding of the winter wheat plots to barley was finished the first of the week. All the barley seeded on the winter wheat plots last week is up to good stands. The weeds are also up and competing with the barley. The spring small grains sown in April are also very weedy and are growing slowly. Corn came up to good stands during the week. The sorghum plots were planted Thursday. Seldom have all conditions been more ideal at sorghum planting time, except for the unusually low temperatures. The ground worked up in very good tilth.

Maximum temperature, 86°; minimum, 44°; precipitation, 0.13 inch.

HAYS:

The weather has been partly cloudy and showery throughout the week, making it possible for tillage work only about half the time, the soil being most too wet for ideal tillage any of the time. Winter wheat continues headingslowly, not more than 35% is headed at this time. Height, heading, and stand are very uneven. The first heads are now in bloom. Barley, oats, and spring wheat are making a grass-like growth, the tallest of which is not more than 2 inches high. Early in the week all the spring small grain plots were cultivated with a weeder for the purpose of breaking the crusted surface of the soil, and with hopes of killing a lot of weeds, of which a full stand emerged at the same time the grain emerged. The result seems to be a stimulated growth of both grain and weeds. Although the cultivation killed many weeds, they are not missed because of thelarge population of survivals, which seem to be all the more sturdy and vigorous because of the thinning and the cultivation.

Not until the last of this week could the May plowing be done on account of wet ground. All corn plots were planted June 7, and the sorghum plots are being planted today. The seed is going into the ground in fair condition, but it would have been better to have had the ground a little drier. However, on account of the continued unsettled weather condition andthe danger of further delay, it was concluded best to seed at this time.

Maximum temperature, 83°; minimum, 43°; precipitation, 0.21 inch.

GARDEN CITY:

Row crop planting has progressed rapidly this week throughout southwestern Kansas. Many farmers are planting sorghum in rows 132 inches or more apart on their land where wheat failed. They hope to prevent soil blowing without depleting soil moisture

beyond a point where wheat can be seeded with crop prospect this fall. All row crops were planted on the D.L.A. project the first part of the week. Corn and kafir planted May 31 is up to good stand where surface planted, but only fair to poor where lister planted. Weeds are making a rapid start.

Maximum temperature, 86°; minimum, 46°; precipitation, 0.10 inch.

TUCUMCARI:

The week was consistently windy and partly cloudy, with promises of rain, but without precipitation. Field work progressed steadily, with a large acreage field cultivated and the remainder of rotation plots planted. The entire May precipitation of 3.02 inches fell prior to the 21st, and with high wind movement the surface soil has dried rapidly. Furrow openers have been used on planters, and stands have been obtained on all rotation plots which have had time for emergence. Possibly full stands will not result from the past two days' planting until rain occurs. All stands have been good with exception of peanuts and cotton in the cooperative plantings. Peaches will produce a light yield. Other tree fruits are practically a failure. Grapes bloomed very heavily, but on several varieties the percentage of fruit set is very low. The more vigorous varieties withstood the prolonged drought better and promise good yields.

Ranges, as well as row crops which were not planted too early, are growing nicely. A large amount of replanting is being done over this section, few stands being obtained on fields where planting was done before May 20 to 25, due to cold soil. Rain would be welcome, but this area at least has not suffered from torrential rains as have localities north and east.

Maximum temperature, 89°; minimum, 50°; precipitation, none.

DALHART:

For the third consecutive year the normal planting date for grain sorghums has been reached with the precipitation for the year to date being less than one-half of normal. Farmers are proceeding with planting, although in many fields, unless moisture is received at opportune times, stands will be 'spotted'. A minimum of planting was done on the station during the week -- the sorghum variety plots on fallow alone being planted. Sorghums planted the last of May are either emerging or have emerged to stands. Emergence is slow, even where soil moisture is present. Corn is up to thick stands. Soybeans, peanuts, and pinto beans are emerging rather slowly. Cotton has not emerged. A rain of 0.30 inch on Thursday night should insure stands of those crops that are planted on the station. Present plans are to complete the planting of rotations the coming week. Increase and nursery fields may not be planted unless additional moisture is received.

D. A. Savage of the Hays station was a station visitor with 10 assistants the first half of the week. Mr. Savage is in charge of a party which is making a study of drought injury and recovery of native grasses. A total of 115 meter-quadrats were charted on the station and the surrounding territory. The condition of the native cover (as observed while accompanying the party) ranged from excellent on a pasture of 160 acres which has not been grazed for six years to an apparent total loss of native grasses on an area of similar size. The former had not been damaged by soil blowing from adjacent

fields, while the denuded area has been swept almost unceasingly for the past 29 months by adjoining bare wheat fields.

H.N. Vinall was a station visitor while conferring with Mr. Savage relative to the native grass study.

Maximum temperature, 88°; minimum, 46°; precipitation, 0.30 inch.
Precipitation for the year to date, 3.32 inches; normal, 6.73 inches.

BIG SPRING:

Planting was again delayed on June 4 when 1.28 inches of rain was received. This came in the form of a hard, dashing rain which caused considerable run off and washing. The milo plots in the rotations had just been planted that day. This rain washed the soil into the rows and it has baked to such an extent that it is probable that replanting will be necessary. Station crops, such as kafir, cotton, and cowpeas, which were up before the rain, are growing rapidly. A light sprinkling of hail accompanied the rain at the Station, but did no damage. Heavy hail was reported from some sections of the county where entire crops were destroyed. Station work has consisted of hoeing weeds from fence rows and planting milo when the fields were dry enough to work.

Maximum temperature, 96°; minimum 54°; precipitation, 1.28 inches.

WOODWARD:

There has been precipitation on four days of the past week, with a total of 1.00 inch. The weather has been cool and cloudy and ideal for the development of wheat. Wheat, curled and brown a month ago, now stands 12 to 18 inches high, but heads are small and will likely wither before maturity. Wheat in better shape before the rains is rapidly ripening with very plump heads. Nearly all plots are very spotted, with some plants nearly ripe and others newly headed. They are what might be termed a mess.

Although the weather has been cool, farmers have had far better 'luck' than usual in obtaining stands of sorghums. There have been no heavy, dashing rains to cover up plants or wash them out. The usual practice is to list in April and split ridges in May or June, at which time planting is done. This year little land was worked until rains in late May. Listing and planting were done at the same time. The ridges are now so weedy it will be difficult to get them clean.

The station, with its dozens of species of flowering plants, is a delightful show. The climbing roses especially, planted three years ago, are making any considerable showing for the first time this year. Many evergreens, transplanted this spring, are making as rampant a growth as if they had not been disturbed.

PENDLETON:

Moderate weather prevailed all week with maximum temperatures higher than those of the previous week. Harvest of first crop of alfalfa is complete in earlier localities, but unusually late in elevated districts due to cold nights. Harvesting of canning peas started this week, with yields about equal to last year's. Continued dry weather has hastened growth and ripening of peas. Wheat in this section is in very good condition and will mature a very good crop without further rains. In some of the drier areas the drought damage has proceeded too far for rains to be of any benefit. Winter wheat is fully headed, and spring wheat is heading. On the station the tillage

and other fallow was cultivated this week with a rotary rod weeder.

Visitors - 13 members of the Soil Conservation staff of the Athena Project on June 4.

Maximum temperature, 90°; minimum 36°; precipitation, none.

Precipitation, Sept. 1, 1934 to May 31, 1935 - 12.15 inches. Normal for this period, 12.13 inches.

LAWTON:

A full week of clear, dry weather has been immensely valuable to the prosecution of farm work that suffered prolonged delay in May. Sunshine, comparatively warm temperatures, except on one day, and an abundant supply of soil moisture provided optimum growing conditions for vegetation of all kinds. Corn grew rapidly and a good many tassels and silks are exserting. Wheat, in the variety project, has ripened considerably more rapidly than in the rotation plots,and nearly half of the variety plots were harvested June 7. The wheat varieties are being harvested considerably greener than in past years, because of hail-broken straw and a very short growth on many of the early maturing varieties. Present conditions indicate that harvest of wheat and oats on the station will be pretty well completed by June 15. Cotton on the rotation plots, commercial fertilizer test, spacing tests, and the variety test was planted June 3 to 6, and good stands were emerging June 9. Cowpeas, replanted on the rotation plots in Field B June 4, were up to a good stand June 8. A large work crew has been busily engaged with sorghum thinning, cotton planting, grain harvest, and cultivating all week. About 7 acres of Atlas sorgo were planted June 6.

The second cutting of alfalfa is producing a very heavy crop of hay on the creek bottom fields, and an unusually good cutting of clean hay is being cut on the upland soils of the station.

Maximum temperature, 91°; minimum 53°; precipitation, 0.06 inch.

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U. S. DEPARTMENT OF AGRICULTURE

JUN 15 1935

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REPORT FOR THE WEEK ENDING JUNE 15, 1935.

HAVRE:

Conditions are beginning to get a little critical in this section. Temperatures were not high during the week, but precipitation amounted to only 0.10 inch. Wind velocity was fairly high on three days, and was rather damaging on the 13th.

Winter grains on continuous cropping have stopped growth and are being damaged, but on fallow they are still in very good shape. Winter rye is blooming, and spring rye is beginning to shoot. Close drilled alfalfa and domestic grasses have entirely stopped growth, and alfalfa has been cut. These crops in rows are still growing. Corn and flax are coming along in very good shape, showing the effect of higher minimum temperatures. Native grasses on the higher grounds have been checked, and the early ones commonly known as June grasses are ripe. Spear grass is headed, and some wheat grass is heading. The growth of irrigated alfalfa is quite heavy. It is well along in the bud and will be ready to cut within a week or ten days.

Visitors included G. Allen Mail, Entomologist, Bozeman; Dr. A. C. Hildreth, Cheyenne; L. F. Locke, Woodward; E. J. George, Mandan; and Mr. Johnson of the Forest Service.

Maximum temperature, 82°; minimum, 43°; precipitation, 0.10 inch.

JUDITH BASIN:

Higher temperatures than have prevailed heretofore this season together with several light showers of rain have provided the best growing conditions of the year to date. Good progress was made with all field work during the week. All plots have been trimmed, and roads and alleys cultivated. Grasses continue to make a fair growth, but the condition of alfalfa remains poor. Winterkilling among the shelterbelt trees is heavier than for some years past. Green ash, wild plum, and Chinese elm seem to have suffered the greatest injury. The damage among the plum selections and hybrids in the orchard seems to be especially severe. Caragana, chokecherry, boxelder, and American elm appear to have suffered the least damage among the decidious trees. Conifers three years old and older did not suffer any appreciable damage.

Messrs. George, Johnson, Locke, and Hildreth inspected the shelter belt work June 14.

Maximum temperature, 76°; minimum, 40°; precipitation, 0.78 inch.

SHERIDAN:

With temperatures ranging slightly above the seasonal average for the first time since about the middle of April, crops responded with the best growth of the season so far. All annual crops appear to be in good condition, with sufficient moisture present for current needs, but rain will be needed to make a crop. In older seedings of alfalfa and bromegrass, downy bromegrass has made the heaviest growth that has been noted here. The most of these seedings will be cut for hay as soon as possible, the downy bromegrass that has been cut so far being eaten fairly well by stock. The earliest seeding of Vaughn barley has just begun to head. Winter wheat is in the boot. All seedings of sorgo and Sudan grass emerged with good stands.

Plowing for fallow was done, except for some late plowing dates, including rye for green manure and sweetclover. On the sweetclover plots there was a good stand of sweetclover, newly emerged from last years seeding, but no second-year growth. On land supporting a heavy growth of vegetation, such as the rye plots, and where weeds were heavy, there was sufficient moisture for the land to plow nicely. Land on which no growth had started was still too wet to plow well. All corn was harrowed. Grass in the roads and on the railroad right of way and rye left in the sheep pasture was cut for hay for current use. Late garden plants were received from Cheyenne and planted.

Messrs. Johnson and Locke from Woodward, Hildreth from Cheyenne, and George from Mandan were at the station for a short time on the 12th.

Maximum temperature, 90°; minimum, 46°; precipitation, 0.10 inch.

DICKINSON:

Light showers on six days of the week were favorable for crop growth. Temperatures were mostly below normal. Most crops grew rapidly, and the outlook for small grains is now excellent. So much cool and cloudy weather has resulted in poor stands of corn on some fields, and some stands are very thin as a result of damage by wire worms. The acreage of corn is small because of the cool season and the scarcity and high price of seed corn. Considerable oats, barley, and millet have been seeded for feed crops. Grasses have developed rapidly. Crested wheatgrass and bromegrass have started to head. The outlook for hay and seed yields are excellent on good stands of these grasses. Most bromegrass fields are thin, however. Native grasses have all grown rapidly during the week. The growth of blue gramagrass and buffalo grass is now about high enough to be grazed. Earlier these species appeared to be dead, and they have thickened up very slowly. A few stolons, 2 to 3 inches long have appeared on the buffalo grass. Western wheatgrass has made more growth than for several years.

Fruit trees are about through blooming, and a good set of fruit is developing. Most varieties were in bloom about a month later than average. Since the trees are coming into leaf, more killing is apparent than was realized. Most plums show considerable injury. Apples and crabs were injured very little. In the shelterbelt plantings western yellow pine showed least injury. Other pines were nearly all killed. Older trees of Black Hills and Colorado blue spruce in crowded situations were seriously injured, but younger trees, 6 inches to 2 feet in height, have fewer dead branches than in most recent years. Several American elm in older plantings are dead, and most trees of this species have some dead branches. Northwest poplar killed badly in the 1929 shelter belt. The Russian olive hedge has many dead branches. Cotoneaster came through better than most other hedges in the locality. Caragana also shows little injury and has made a rapid growth the past week. No blister beetles have appeared on it yet.

Visitors: J. M. Stephens, Principal Agriculturist, Northern Great Plains Field Station; Dr. Hardies and Mr. Alexander, Soil Conservation Service; V. T. Heidenreich, Junior Range Examiner, U. S. Indian Service, Elbowwoods, North Dakota.

Maximum temperature, 85°; minimum, 46°; precipitation, 0.45 inch.

MANDAN:

Agronomy - The past week has been favorable for all field work. Only light showers fell during the week. The warmest day of the season to date was on the 14th. Corn, Sudan grass, and sorgo were planted for feed. Mowing of thin and weedy spots in the feed fields has been started. Some further seeding of forage crops was completed. Crested wheatgrass is now completely headed out. The chances are favorable for a good hay and seed crop.

Maximum temperature, 85°; minimum, 49°; precipitation, 0.17 inch.

Cooperative Grazing Experiment - Native vegetation has made marked progress during the past two weeks. Blue grama grass is now large enough to furnish some grazing. Spots of blue grama that looked dead a short time ago are showing a good deal of new growth. The crested wheatgrass pasture is furnishing an abundance of feed and is now much ahead of the steers. Steers appear to be making favorable progress.

Horticulture - The second spraying of the season has been completed. A mixture of lead arsenate, lime sulphur, and nicotine sulphate was used. Cultivating, hoeing, and repairing trees has also been in progress. Most wild fruits have set a heavy crop. Plums are variable, but the general tendency is for a light set of fruit. Many of the crabapples and some of the apples are showing a heavy set. Currants and gooseberries have generally set heavy crops.

Winter injury notes are being taken. Native fruits such as chokecherries, Golden currants, sandcherries, Juneberries, and buffaloberries are in good condition and show but little killing from cold or drought. Plums are variable, most of the native varieties being in fair to good condition, but many of the hybrid plums show severe drought injury. The apples and crabs also show some killing from drought, but as a class do not have as much dead wood as the plums. Currants suffered severely from drought injury, but gooseberries came through in fair condition. Many of the strawberries died from drought injury. Raspberries and grapes suffered severe injury when not covered with soil.

Vegetables in the gardens were hoed during the week. So far everything looks promising for a good crop, except melons which are backward and have a poor stand in general. Pruning and dead wood removal, spading groups, and lining up roadsides has been in order on the grounds. The lilacs, with the exception of the persian, are now almost past their glory. They were unusually fine this year and seemed to attract a great many visitors, as did also a 300-foot border of Darwin tulips. Spirea Van Houtte is now beginning to make a fine display. So far peonies in variety are rather slow, but few buds showing color. The plants are vigorous however, and there should be a fine display next week.

Visitors included President J. H. Shepperd, and Dr. H. L. Walster, N. Dak. Agricultural College, H. O. Putnam, County Agent, Burleigh County, W. C. Allen, Editor, Dakota Farmer, J. H. Jones, Minneapolis Journal, State Senator Watt, Cass County, N. Dak., and E. L. Groom, Secretary, Greater N. Dak. Agric. Development Association.

BELLE FOURCHE:

Another beneficial rain was received June 10, but warm weather prevailed most of the week, and all crops made an abnormally rapid growth. Small grain has tillered extensively and is making such a rank growth that an unusually favorable distribution of precipitation will be necessary during the remainder of the season to permit the grain to mature normally. Corn is up with satisfactory stands, but pheasants are

becoming very destructive on some of the plots. Sorgo ground was duck-footed, harrowed, and planted to sorgo. Trimming of plots was completed, and roads and fallow plots were duckfooted.

Visitors during the week included: L. F. Locke, Woodward; E. J. George and K. Nickerson, Mandan; A. C. Hildreth, Cheyenne; and E.M.Johnson.

Maximum temperature, 84°; minimum, 47°; precipitation, 0.62 inch.

ARCHER:

The weather was warm with showers on six days. A rain, which totaled 0.34 inch, occurred during the night of June 10 and prevented field work during June 11 and part of June 12. Weather conditions during the past week caused a better growth of vegetation. Corn is emerging, and small grains and prairie grasses are growing rapidly. Work at the station consisted of seed bed preparation and the planting of corn and potatoes. Because of unsettled labor conditions at the coal mines, the yearly coal supply is being stored.

Director W. L. Quayle and H. L. Curtiss, Landscape Artist of the University of Wyoming, visited the station June 13.

Maximum temperature, 87°; minimum, 45°; precipitation, 0.64 inch.

NORTH PLATTE:

The past week has been the most favorable for all crops since the beginning of May. Corn planting is still under way, but good progress is being made. With another week as favorable as this, corn and sorghum planting will be completed and a start made on first cultivation. Winter wheat is in full head, very rank, and in condition to lodge badly unless dry weather prevails. Spring grains are beginning to head and will also have a heavy growth of straw. A beginning has been made on the first cutting of alfalfa.

Maximum temperature, 91°; minimum, 43°; precipitation, 0.32 inch.

AKRON:

One of those hard, dashing rains this past week that run water all over everything. Drainage passageways and erstwhile dry, sandy creeks resembled creeks and rivers for a while. Rainfall of one-half inch Monday night interferred with timely seeding until the next afternoon. The heavy rain Tuesday night paralyzed seeding until the week-end, when the grain sorghum variety experiment was finally seeded.

Rotation fallow, rye, and pea plots were plowed before and following the rain. Weeds were not high on the fallow plots. The rye plots had 1 to 5 per cent stands in preheading stage. The remainder of the cover was a well emerged stand of weeds, mainly Russian thistles. The pea plots were very uniformly 15 inches tall, and very attractive. They were in pre-blossoming stage.

Rotation barley is in head, standing nearly waist high. Oats are showing a few heads. Winter wheat on the Cereal project that escaped the ravages of the winter promises yields in excess of 40 bushels. Rotation and rate and spacing corn has emerged to surprisingly satisfactory stands. Rotation kafir plots seeded before the recent hard rain were reseeded this week-end. Earlier weeding operations with the duckfoot cultivator now look like a first class thinning job had been accomplished. Many weeds and volunteer grain loosened then have taken on a new lease of life.

Native sod is very weedy with annuals, most showy being a narrow-leafed lamb's quarter (Chenopodium lanceolatum), which is not now nor in the past dominant over the regular lamb's quarter on the cultivated areas. Salmon colored false mallow is also very showy over the prairies at this time this year.

D. A. Savage and about ten co-workers arrived this week-end to make an ecologic study of the native sod grasses of this region. L. W. Kephart spent a few hours at the station Friday afternoon.

Maximum temperature, 94°; minimum, 49°; precipitation, 2.43 inches.

COLBY:

This has been a favorable week. During two nights there were hard showers, which kept the surface of the ground moist for corn and sorghums to come up. In some localities near here the rains were so heavy that much corn and sorghums were washed out or covered so deep that replanting will be necessary. About half the time it has been cool and cloudy, and about half the time it has been hot and sultry. There have been no dust storms lately, but now and then there is some soil blowing on bare fields.

The sorghums came up to good stands on all plots during the week. Corn is growing nicely but is getting weedy. The spring small grains are growing slowly and are being smothered by thistles and other weeds.

The June plowed fallows were plowed to-day. The ground was wet and turned up mellow. On those which had not been worked previously it was noted that the weeds are beginning to deplete the moisture supply. All the other fallow plots were surface tilled to-day, as they were getting weedy.

Maximum temperature, 98°; minimum, 56°; precipitation, 0.79 inch.

HAYS:

For most part the week has been cloudy or partly cloudy interrupted only by a few hours clear sky. The conditions have been ideal for winter wheat and spring small grains, for germination of corn and sorghums, and for alfalfa. It has also been favorable for tillage work, except for one-half day following a shower. Corn and kafir on the plots are up to good stands, almost regardless of the method of seedbed preparation. However, there is some difference in the percentage of germination.

Work consisted of finishing the seeding of kafir on borders, seeding oats on one border for a late crop, plowing plots previously too wet for plowing, harrowing corn plots, cultivating roads and alleys, digging out bindweed plants which had developed from seed carried on to the project from an adjoining field, scattering of poison bait for destruction of mice and ground squirrels which have been raiding the corn plots, and soil sampling a number of corn, kafir, and wheat plots. Alfalfa on the commercial fields is now being cut and baled. The crop of early cherries is being picked. Pastures contain sufficient growth of grass and weeds to maintain a limited amount of livestock.

Maximum temperature, 94°; minimum, 61°; precipitation, 0.37 inch.

GARDEN CITY:

Spring planted row crops in southwestern Kansas are rapidly emerging. Most of them show good stands. The first cutting of alfalfa is being cut and stacked in the irrigated sections. Recent warm weather has caused rapid growth of crops and weeds on the station

plots. Very good stands of all spring planted crops except milo have emerged. The milo did not germinate as well as expected.

D. A. Savage and party finished their grass surveys in this vicinity and moved to Tribune on June 9. They found many buffalo grass seedlings on the hard land pasture on the station.

Maximum temperature, 101°; minimum, 58°; precipitation, 0.45 inch.

TUCUMCARI:

Precipitation measuring 0.18 inch the 14th was insufficient to meet moisture remaining from rains prior to May 20, but fortunately all cooperative plantings made the past week were made with furrow openers on planter in attempt to place seed in moist soil, some 4 or 5 inches below the surface. Considerable increase land was lister planted and should also show stands within a few days. All increase and plot plantings that have had time to emerge show good stands, with the exception of peanuts and cotton which are uneven. Tree rows have been cultivated and hoed, vineyard and evergreens sprayed, increase land field cultivated in preparation for drilling when rain occurs, and some early crops knifed. Thinning has not been started.

Ranges show the need of moisture, and young crops would respond greatly to rain, although they are not as yet suffering. The wheat yield of the county will far exceed all early expectations, and it now appears that all station wheat and rye plots will be harvested. Six weeks ago it seemed likely only the wheat and rye on fallow would produce any grain.

Maximum temperature, 95°; minimum, 58°; precipitation, 0.18 inch.

DALHART:

The milo and kafir rotations were planted during the week. With the exception of fall plowed plots and fallow plots no emergence was expected at the time of seeding, except for occasional areas. However a rain of 0.98 inch last night, which fell in about three hours, should give ample moisture for emergence, as no appreciable crusting of the soil is anticipated. This moisture was readily absorbed by the soil, and there was no run-off on worked fields at all. Emergence has been good on the grain sorghums planted before this week. As there was no reserve of moisture in the soil, none of the increase fields or the sorghum nurseries have been planted. In addition to these, there remain the forage plots on the rotations to plant. Planting will be rushed the coming week, so that all additional planting can be completed. Work during the week has consisted of final seedbed working, plowing fallow areas and plots, and weed hoeing.

Maximum temperature, 95°; minimum, 59°; precipitation, 0.90 inch.

BIG SPRING:

It seems that one extreme follows another, for now that the rains have started, they are coming at almost too frequent intervals. A torrential downpour totaling 2.42 inches was received June 13; the greater part of this fell within two hours time. The result was a large amount of washing and runoff. The station grounds were all under water for some little time; they now present a very unsightly appearance, as all of the debris from fields and stack lot seem to have settled in the yard. Sorghum stubbles are everywhere, and the grass is covered with a heavy coating of silt. Milo plots in the rotations had just emerged to good stands, but they are now level and covered so deeply with soil

that they will have to be planted over for the third time. Eighty acres of increase milo will also have to be replanted, some of it for the fourth time. Most of the older planted plots were not damaged so much except where the ends were covered. By uncovering these spots, it is probable that these plots can be straightened up. Station work has consisted of planting milo, staking roadways, trimming plot ends, and thinning part of first date of sorghums.

Maximum temperature, 89°; minimum, 61°; precipitation, 2.87 inches.

LAWTON:

Cool, cloudy, misty, showery weather throughout the past week, two days excepted, seriously interferred with small grain harvest and produced only 0.48 inch precipitation.

Corn is silking and tasseling under ideal weather conditions, and the crop presents a healthy, vigorous, growthy appearance. Sorghum thinning was completed on the 13th, and subsequent growth has been very rapid. Cotton planted June 3 - 6 emerged quickly, and the young seedlings are making a rapid growth.

Practically all of the small grain, wheat, oats and spring barley is ripe, and most of it has been for several days. Frequent showers, inconsequential in terms of measurable precipitation, permitted only a minimum amount of harvesting. About seven tons of very high grade alfalfa were stored in the barn on the 11th and about three tons are still in the field soaking up the daily showers.

Dr. F. A. Fenton, and L. W. Osborn, both from Stillwater, Okla., were station visitors.

Maximum temperature, 94°; minimum, 65.

WOODWARD:

Except for two hot, bright days the week has been cool and cloudy, but with only a trace of precipitation. Most of the sorghums and cowpeas which have been planted over the past ten days are coming up to excellent stands, as conditions have been almost ideal for their doing so. Wheat is still in a very unsatisfactory condition for harvesting, especially with the combine. On nearly all plots there are two distinct dates of ripening for the same plants. Green heads little past bloom appear in a distinct plane above nearly ripe heads. On some plots green streaks and blotches run through grain otherwise ripe. It appears that harvesting will be difficult and expensive and data secured of very questionable value.

Weather over several weeks has been very conducive to lingering bloom on many flowering plants. Roses especially have faded very slowly. Elderberries are ripening while a second stage of bloom is in progress. Hollyhocks never bloomed so perfectly. The slender barbatus penstemon is gay with its dainty red flowers. Skullcap makes a rich border of blue. Tall day lillies flaunt a gaudy display. Yuccas are stately and striking, having this year grown to an unusual height. Gaillardias color whole sections with dark red and gold. The desert willow and bignonias announce that summer is here. They will bloom during all the hotter months as will the salvias, the lavenders, the shrub althea and crapemyrtle.

Work of the week has consisted largely of preparing fields for planting and the planting of row crops.

K.S.Quisenberry spent several days here on the wheat nursery.

Maximum temperature, 95°; minimum, 62°; precipitation, trace.

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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

JUN 22 1935

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REPORT FOR THE WEEK ENDING JUNE 22, 1935.

HAVRE:

With only 0.37 inch of rainfall in June, crop growth has been materially checked. Winter grains on continuous cropping are seriously injured and it has been necessary to harvest most of the domestic grasses and alfalfa. Winter grains on fallow are faring better. Winter rye is past the bloom and will at least made a heavy hay crop. Spring rye is beginning to head and is shorter than usual. While all small grains have been injured, rains now would make fair yields on fallow. Corn and flax are growing nicely.

The irrigated alfalfa is being cut and is very heavy. Ranges are dry on the higher lands, but growth continues in the more favored locations. However, a few days of real warm weather would entirely check growth.

Dr. E. A. Starch of the Montana Experiment Station visited the station this week.

Maximum temperature, 80°; minimum, 35°, on the 16th which is a station record for low temperature at this date; precipitation, 0.02 inch. Deficiency in June to date 1.73 inches.

JUDITH BASIN:

There were several light showers of rain during the week which interrupted field work but which added very little to the supply of soil moisture. Two of the storms were accompanied by hail which caused some damage on the station. Winter wheat and crested wheatgrass being grown for seed suffered 10 to 20 per cent damage while the garden, corn and spring grains were injured but should recover. The hail damage was much heavier to the north of the station. Pale western cutworms are numerous on some fields and are doing some damage. Grasshoppers are hatching out but present indications are that they will not be numerous enough to do much damage.

President Atkinson, Director Linfield, and Professors Chittenden and McKee visited the station Friday.

Maximum temperature, 74°; minimum, 34°; precipitation, 0.55 inch.

HUNTLEY:

Good growing weather has prevailed throughout the week and all crops have responded vigorously. Winter wheat is practically all headed out and some plots of oats are showing heads. Spring grains have reached the stage where they are drawing heavily on the soil moisture and although no firing is noticeable as yet, the plants look wilted at the end of a warm day. Weeds are more numerous this season than for the past four years and with frequent showers keeping the soil too wet to be cultivated efficiently all fields look very ragged. Row crops have been cultivated between showers during the week and another day or two should find that job completed.

Late sown crops such as corn, sorgo and soybeans have all emerged and on most plots the stands are good. Pheasants have caused some injury to corn stands by pulling up the seedling plants and eating the seed. A little replanting will have to be done in these spots.

Maximum temperature, 78°; minimum, 41°; precipitation, 0.49 inch.

SHERIDAN:

Much cooler weather than during the previous week prevailed over the entire week, with considerable cloudiness at times and with three light showers and a trace of precipitation. Crops continued to make fair progress. Winter wheat began to head early in the week. Brunker and Carleton oats and more of the earliest varieties of barley have just begun to head, and some alfalfa is beginning to blossom. Meadows where downy bromegrass was thick were mowed, and plots similarly infested will be cut as soon as possible. Haying was quite general over this section during the week for the same reason. Corn in plots was thinned to stand, and the earliest seedings of Sudan grass in rows were cultivated.

Maximum temperature, 77°; minimum, 38°; precipitation, 0.53 inch.

DICKINSON:

On June 19 a rain of 0.69 inch greatly improved the outlook for crops. This brought the total for June up to 2.09 inches but was the first rain since early in the month heavy enough to wet into the subsoil.

Cool weather favorable to small grains and grasses has continued. Many of the small grain plots now have a dense stand, 12 to 18 inches in height. Since very little water is available in the sub-soil timely rains will be required to develop the "bumper" crop which now seems possible.

Rye was plowed under on the green manure plots on June 17th. Growth was 2 to 3 feet tall but thin on the ground. Rye which is to be harvested has thin stands and is now 3 to 4 feet tall and nearly fully headed. Corn on the rotation was cultivated the first time. Cool weather has delayed corn so that it is now only 4 to 6 inches tall.

Fruit trees were sprayed June 18 and 19. The outlook is for a good yield of apples and crabs but only moderate yields of plums because so much of the wood was killed by the drought.

Pastures are now providing ample feed. All native pastures contain a great variety of weeds. An unusual number of native plants are now in bloom.

Visitors: Dr. P.A.Young, Soil Conservation Service; William Wiidikas, North Dakota Experiment Station; Dr. J. H. Martin and family, on leave, visited the station to-day.

Maximum temperature, 76°; minimum, 39°; precipitation, 0.76 inch.

Precipitation so far for June, 2.09 inches; precipitation for the year to date, 8.89 inches.

MANDAN:

Agronomy - Field work was delayed on one day because of rain. A hard rain of 0.83 inch fell in less than an hour on the 15th. There was a good deal of run-off from this rain which caused soil washing on some of the fields. An inch of rain fell during the day of the 20th. While this rain was spread over a good part of the day, a good deal of run-off occurred as the previous hard rain left the soil in such condition that run-off would readily take place. There was little wind during the week. Part of the days were cool, but the past two days have been warmer.

Mowing of hay on some of the feed fields was started during the week. The second cultivation of row crops was nearly completed. Small grain is making excellent progress and looks heavy. Corn is backward with poor color. Crested wheatgrass is now fully headed out. The crop should produce a good yield of hay and seed.

Maximum temperature, 76°; minimum, 45°; precipitation, 1.83 inches.

Cooperative Grazing Experiment - Native vegetation continues to improve. The pastures are in excellent condition for grazing at present. The growth and stand of vegetation is much below normal, even in the larger pastures. It was necessary to move the rotation steers to another division at the end of 20 days. Normally the division should carry them for 45 or 50 days. There should be a good growth come back on the division from which they were moved.

Horticulture - Warm weather coming after the rains is encouraging a good growth of horticultural plants. Present prospects are for a better crop of fruit than last year, although many of the trees have been weakened by last year's drought, and will require some time to recuperate.

Grapes have been tied to the wire trellis. Budded plants in the nursery have had suckers removed and have been tied to wire stakes. Poor stands resulted from last year's budding, except from apples which show good stands. Cultivation and hoeing of orchards is in progress.

The recent rains have soaked up field plots and lawns beautifully, and vegetable crops and the grounds look better at the present time than for several years past. Cool weather crops such as cabbage, rootcrops and peas are doing wonderfully well, while cucurbits, waxbeans, sweetcorn, melons, and tomatoes are backward. Second planting of spinach and radishes are at their prime at present, as are also some head lettuce varieties such as Mignonette and Salamander. The Crimson Globe radish is one of the finest varieties ever grown at the station, very large size, crisp and sweet.

Spirea Van Houtte and Snowballs are brightening up the grounds with roses and peony buds just starting to unfold.

Considerable labor has been spent during the past week in trimming up roadsides about the grounds. The work will be completed in the near future.

Arboriculture - Hoeing in testing blocks and nursery fields was in progress the first half of the week. Some cultivation has also been done. The heavy rain the end of last week and again on Thursday of this week, has done considerable damage to fields and roadways. Several roads have been seeded down to bromegrass and brome-sod hauled to fill small gullies. Furrows have been plowed along contour lines around sideland nursery fields to prevent heavy run-off from the sod washing away the soil from fields.

All tree seedlings are making very slow growth. The soil apparently is not warm enough for the growth expected at this time of year with such favorable moisture conditions.

Visitors for the week included: E. W. Johnson and L. F. Locke, Woodward, Okla.; Dr. A. C. Hildreth, Cheyenne, Wyo.; Leroy Moomaw, Dickinson, N. Dak.; H. J. Clemmer, Regional Director, O. H. Engstrom, Engineer, J. Shautie, Regional Engineer, R. P. Daugherty, A. C. Fox, Soil Conservation Service, Huron, S. Dak.; Dr. J. R. Parker, R. L. Shotwell, Bureau of Entomology, J. A. Munro, State Entomologist, N. Dak. Agric. College, R. H. Hanford, Entomologist, Exp. Sta., Brandon, Man.; L. C. Paul, Entomologist, Exp. Sta., Saskatoon, Sask.; and J. R. Dawson, Bureau of Dairy Industry. Dr. John Martin, Division of Cereal Crops and Diseases, visited the station with his family, returning from a vacation in the Yellowstone Park.

BELLE FOURCHE:

The week was unusually cool, and numerous light showers occurred. Precipitation was recorded on six consecutive days, but in no instance was the amount sufficient to be of any great value to crops. The frequent rains were favorable to the germination and emergence of shallow seeded late crops. Sorgo is coming up and good stands apparently will be secured on all plots. Native and cultivated grasses have made an abnormally rank growth this spring, and hay yields should be unusually heavy. Field work has included cultivating corn, harrowing potato plots, and duckfooting roads.

J. H. Martin, visited the station early in the week.

Maximum temperature, 79°; minimum, 43°; precipitation, 0.66 inch.

ARCHER:

During the week the weather was cool, especially the fore part, during which time 0.34 inch of precipitation occurred. To-day, June 22, the weather is warm.

Vegetation is making good growth. This is especially true of the grasses and most of the trees and shrubs. The last of the spring seeding will be finished to-day. Some of the land which had been intended for corn has been seeded to Sudan grass. The corn, while late, has emerged with a good stand.

Work at the station consisted of seeding millet and Sudan grass, tillage of fallow plots, and the cultivation of trees and shrubs. The lining of roadways is under way to-day. The storage of the season's coal was completed June 17.

Maximum temperature, 83°; minimum, 41°; precipitation, 0.34 inch.

AKRON:

Another week of heavy rainfall over Northeast Colorado, but not so general in character as those preceding. Field work was not interferred with here on the station and good progress was made towards catching up with urgent field work.

Besides general cultivations, the station corn was cultivated for the first time, the listed corn with the lister cultivator, and the surface planted with the rotary hoe, which pulled by one of the tractors and weighted down did a very satisfactory job. Orchards were also cultivated along with the border plantings of trees and shrubs. Rate of seeding proso, and bean variety experiment were seeded. Weeds, so prominent on the grounds, were mowed.

At the request of the County Extension Agents, recently assembled in Fort Collins, this station is to hold a field day July 2.

Rotation barley is in soft dough stage and now promises one of the heaviest yields within the history of the station. Oats are breaking into head, but these plots do not promise to be as 'showy' as the barley. One three-acre field of foundation Kanred, now in full head, is about five feet high. If this does not go down, or is not hailed, it likewise promises a good yield. Tenmarq on this ground in 1930 yielded 62.5 bushels per acre, and the Kanred looks fully as good at the present time.

Maximum temperature, 90°; minimum, 44°; precipitation, 0.36 inch.

NORTH PLATTE:

Weather reverted to the cool-wet classification for the week. Rains occurred on three days. Conditions were very unfavorable for curing of alfalfa. Most farmers have started cutting, but very little has been stacked. Corn planting has at last been completed. Early varieties of spring grain are heading. Some rust has appeared. Conditions have been ideal for its development, and heavy damage may result if drier weather does not come soon.

Maximum temperature, 79°; minimum, 47°; precipitation, 2.21 inches.

COLBY:

This week started out with the heaviest rain we have had in two years Sunday night. Almost an inch and a quarter fell in about a half hour. It fell so fast and hard that there was considerable run-off and washing. Since then it has been cool and mostly somewhat cloudy, ideal for field work after the ground dried off enough to permit working. Field work has been very pressing, too, as the country is now fairly overrun with weeds, in spite of the fact that all available power is being used to the utmost in an effort to turn them under. They are rapidly depleting the moisture supply in the soil. Up to Wednesday it was too wet for field work, and by Saturday where the weeds had not been destroyed, they were beginning to wilt on account of being short of moisture.

Corn on the plots made a nice growth this week and is now about four inches high. It was thinned and cultivated during the week. The ground was in excellent condition for working. The surface planted plots were very weedy, mostly red root. The sorghums are getting started. On some plots the stands were washed under in places by the hard rain. The spring small grains are beginning to show their first awns and are up to 10 inches high. Thistles are smothering them, however. The green manure plots were turned under to-day. The barley on the rye plots and the peas were about 10 inches high. They were very weedy, and the growth was very succulent. They were beginning to wilt and show the dark color which indicates a shortage of moisture. The ground was barely moist, but turned under fairly mellow. Pastures are a mass of weeds, which are furnishing much nutritious pasturage. Cherries are ripening a fair crop.

Maximum temperature, 86°; minimum, 49°; precipitation, 1.26 inches.

GARDEN CITY:

Sorghums, corn and weeds continue to grow rapidly. However rain will be necessary before long to support a continuation of growth.

A trip through western Kansas revealed that the southwest and the extreme western parts of the state are still the driest. North of Garden City many fields are still bare and give rise to frequent mild dust storms. Fields that were hummocked due to dust collecting in thistles are covered with weeds while adjoining clean-swept fields are still blowing.

Maximum temperature, 88°; minimum, 53°; precipitation, 0.25 inch.

HAYS:

The weather has been ideal for growing crops. Oats and spring wheat are about eight inches high and not yet heading. Barley is heading at about 12 inches. All these crops are extremely weedy and many of the weeds are as high as the crops and it is a question whether any of them will be able to make a yield because of weeds. Oats seem to offer best

competition for the weeds. Winter wheat is still heading. It is deteriorating considerably in looks because of red rust and drying off of the foliage. It is still a question how much of it will mature grain. At present it looks like, if it does mature sufficient grain to require harvesting, it will be necessary to do the harvesting with a binder instead of the combine.

Peas are very thin and weedy. The growth of both peas and weeds are about 10 inches high. There will be plenty growth for plowing under, but about 75 per cent of the growth will be weeds. The peas like all other crops are behind the season because of late germination.

Work during the week includes cultivating corn plots with a spring tooth weeder, cultivating sorghum plots, plowing M. F. winter wheat plot N, cultivating some of the roads, relisting some blocks of fallow, and thinning sorghum crops.

Maximum temperature, 84°; minimum, 52°; precipitation, 1.31 inches.

TUCUMCARI:

While rain has threatened several times and good showers have been received in nearly all directions, there was no precipitation on the station the past week. Range land and fields are drying fast, only 0.18 inch rainfall occurring since May 20. Wheat yields, in sections of the plains where wheat survived the drought, will run from 1/3 to 1/2 of the estimated yield of ten days ago, drought and high winds injuring all fields seriously.

Station row crops are not making so rapid growth as desired, but are withstanding the hot, dry weather very well. June 15 date-of-planting plots have emerged to stands with the exception of a few bean and cowpea plots. No drilled sorghum on increase land will be seeded until after rain occurs, for fields are ashy dry to a depth of four inches.

Work included some knifeing of plots and increase, harvesting of wheat variety plots, trimming row crop plots, and mowing, hoeing and cultivating weeds from trees rows, fence lines, and grounds.

Maximum temperature, 104°; minimum, 58°; evaporation, 2.853 inches; wind velocity, 6.6 miles per hour.

DALHART:

Weather conditions remained favorable for and the week saw the completion of the seeding of sorghums, cowpeas, and nursery material. The last of the date-of-planting for the sorghum varieties was made on Monday; they have emerged to stands to-day. For most of the row crops seeded during the week it is felt that emergence will be secured. It is not considered possible for drilled plots to emerge to stands. Seeding during the week consisted of forage rotations and forage nursery and variety material, sorghum varieties, sorghum nursery rows, milo-disease nursery, seed fields, and increase fields. With the exception of cotton all crops seeded previous to this week have emerged to stands. Some rows of cotton have emerged while other rows were covered too deep by shifting sands. Corn, which is growing nicely, was cultivated during the week. A start was made towards thinning sorghums. The thinning on the first two dates-of-planting of the sorghum varieties is rather tedious job as there are three distinct emergences and the plants are from small seedlings to excellent thinning size.

While no rain of consequence was received on the station during the week heavy downpours were received close to the station in all four directions. The rainfall deficiency for this year is alarmingly close to the average for the two preceding years. Rainfall for the month of June is 1.45 inches for 1935 which is 1.00 less than normal for the month to date. Precipitation for 1935 to date is 4.47 inches while the average to this date is 8.10 inches.

Maximum temperature, 102°; minimum, 54°; precipitation, 0.17 inch.

BIG SPRING:

Weather conditions during the past week have been anything but favorable for crop production. During this time the station has been in the path of nearly all the weather hazards so detrimental to crops in this section. On the night of June 19 a hard, dashing rain amounting to 1.18 inches was received; this was accompanied by a hard wind and hail. The wind destroyed several small homes in this vicinity and the hail killed a large amount of cotton. This was followed by a severe sandstorm while the fields were still boggy. All available equipment was used to get the farm roughed up, but even at that some of the crops were pretty badly injured before the farm could be covered.

Cotton spacing plots had just been thinned when the hail hit, and the others were ready; after the storm only a few stiff stems remained, so all of the cotton plots were replanted on June 22. Other work has consisted of planting the June 15 date of sorghums, replanting soybean varieties, and increase milo and Sumac.

Maximum temperature, 98°; minimum, 62°; precipitation, 1.18 inches.

LAWTON:

Moderate temperatures, varying from a minimum of 57° to a maximum of 96° during the past week, contrasted sharply with those for the same period one year ago when the maximum hovered steadily above 100°. Substantial to excessive rains were reported throughout the State, but only a trace was recorded in this vicinity. A good shower would be quite beneficial to the top soil that is already so hard and dry.

Corn is very rapidly approaching the roasting ear stage of growth, and most of the sorghums are about knee high. Cotton, although planted from one month to six weeks late, is growing rapidly and chopping on the station plots will begin on the 24th. Most of the fields throughout the county are quite weedy and many farmers are making unusually late plantings. Small grain harvest was finally completed June 19. Oats yields will be disappointingly low because of hail damage.

WOODWARD:

The weather for the past week has been generally cool and pleasant with three light showers totaling 0.19 inch. Due to the absence of high temperatures or high wind the soil has remained in almost ideal condition for securing stands of row crops for fully a month. Few stands have been lost except because of poor seed which was used to a greater extent than usual this year. There will likely be a great number of farmers' fields that are weedy also, as weather has been ideal for weed growth.

None of the rotation plots of wheat have yet been cut because of the presence of so many green shoots that occurred due to excessive moisture after severe drought injury. These, however, are now severely attacked by rust and for some other reason as well as dying at the base.

It is more than likely that within a week if hot weather prevails that all of the late growth of wheat will be dead and withered. Until this occurs it is not practicable to harvest wheat that is now ripe.

Mr. Lamb of the Division of Forest Pathology has been securing encouraging results in his damping-off studies. Damping-off is usually the most serious with evergreens. This year due to weather conditions it was especially destructive of broadleaves.

Most of the flowers that have made the landscape so bright since the rains started are gone or are rapidly disappearing. In their places now appear the monardas, day lillies, the balloonflower, the butterfly weed, the salvias and sunflowers. Pentstemon barbatus has been in bloom for weeks and its slender form rising to four feet and bright with pink and red flowers is one of the most attractive things on the station.

Work of the week has consisted of eradicating weeds and planting sorghums. Thinning of sorghums was started. A very heavy crop of alfalfa hay was cut and put in cocks to cure.

Maximum temperature, 96°; minimum, 51°; precipitation, 0.19 inch.

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U. S. DEPARTMENT OF AGRICULTURE

JUN 20 1935

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REPORT FOR THE WEEK ENDING JUNE 29, 1935.

HAVRE:

The rainfall for the week was 0.01 inch, which brings the total for June to 0.38 inch. This is the driest June on record at the station and to date the second driest since 1880.

Early spring grains have been damaged seriously on continuous cropping. They are all being prematurely forced. Early seeded oats and barley are showing heads. Spring rye is beginning to bloom. Winter rye on fallow shows a heavy growth, but will make very little grain without more rain. Late seeded small grains, except on fallow, are suffering very seriously because of lack of surface moisture. Corn and flax are making very good progress. Irrigated alfalfa is being stacked and the growth is quite heavy.

Native grasses have stopped growth almost entirely, the early grasses that headed out have dried up. Some of them have made considerable seed, but they are not especially palatable after they mature. The later grasses have checked growth almost entirely. Livestock, however, are in very good condition for they have had the benefit of a heavy growth of early grass.

Visitors during the week included Dr. Alfred Atkinson, President, Director F. B. Linfield, Professors Clyde McKee and D. W. Chittenden, all of Montana State College. R. W. White, who is with the Department of Entomology of the Dominion of Canada, located at Lethbridge. Dr. P. A.Young with Soil Erosion, headquarters at Mandan, who is selecting fields of native grass seed to be used in re-seeding ranges.

JUDITH BASIN:

No moisture of consequence has been received during the week and all crops are suffering on account of dry weather. Winter wheat is just beginning to head and is in the greatest need for moisture. All spring grains and grasses are firing. The alfalfa hay crop over the central part of the State is very poor, that on the uplands being a total failure. Native pastures are fair for this season of the year but without additional moisture they will deteriorate rapidly.

Maximum temperature, 86°; minimum, 40°; precipitation, 0.04 inch.

HUNTLEY:

Favorable growing weather has continued throughout the week and where moisture supply was good, crops have made marked advance. Winter wheat, rye and the more luxuriant plots of spring grains are beginning to fire and soil samples taken recently show the moisture content of these plots to be low. It will require a lot of rain to carry the present growth of spring-sown small grains to normal maturity. Winter wheat is in bloom and oats are about fully headed. Corn, beans, Sudan grass and sorgo have almost doubled their height in the last few days.

The small amount of precipitation received the last week has enabled us to accomplish considerable in the way of weed eradication. Cultivation of row crops and alleys was completed and such large weeds that escaped the cultivators have been hoed out. Weeds from the alfalfa and crested wheatgrass seed plots are also being removed by hand. The alfalfa seed plots are showing a very heavy bloom this year but there appears to be a scarcity of bumblebees and other insects essential

pollination of the flowers.

Station visitors during the week included President Atkinson of the Montana State College and Director Linfield, Professors, McKee, Chittendon and Morris of the Montana Experiment Station.

Maximum temperature, 92°; minimum, 40°; precipitation, 0.08 inch.

SHERIDAN:

The dry weather, with no rain of consequence, which has prevailed here since the heavy rains terminating May 20, still continues. The cool weather accompanied by plenty of moisture which prevailed during the spring caused heavy tillering of all grain, and in winter wheat where the growth is heavy firing was evident by the beginning of the week. Some of the spring grain began to fire within the last two days, and a lack of moisture is apparent with all crops. Temperatures still continue somewhat below the average for the season.

Alfalfa in plots where downy bromegrass was heavy was cut, and the most of it hauled and weighed. All row crops were cultivated, and thinning of all corn was completed.

Maximum temperature, 90°; minimum, 34°; precipitation, 0.19 inch.

DICKINSON:

Moderate weather continued till the last two days of the week when it became much warmer. A maximum of 92° to-day is the highest so far in 1935. One light shower fell. Crops are now showing need of moisture. Grains have wilted in the afternoon the latter part of the week. The warmer weather has been favorable for corn which is about as short as ever seen at the end of June.

Most of the week was spent in weeding. Field peas were plowed under June 26. The stand of peas was good and the growth thick and about a foot high but not blooming. About all the available water was gone so the soil was cloddy as plowed. Some small patches of grass were cut for hay. Crested wheatgrass on rotations 10 and 12 was cut. Yields were about .9 ton per acre as these plots were seeded with wheat in 1933 and the stands were thin. Most of the older stands where the grass is thicker and being left for seed would make over a ton of hay to the acre. Alfalfa in rows is blooming and will be left for seed. No alfalfa hay is ready to be cut as the old stands were all killed and new seedings are too small to harvest.

H. L. Knight, Editor, Experiment Station Record, and Mrs. Knight, on vacation, visited the station on June 24. J. T. Sarvis, Mandan, visited the station on June 26.

Maximum temperature, 92°; minimum, 45°; precipitation, 0.05 inch; precipitation June 1 - 29, 2.14 inches; precipitation to date in 1935, 8.94 inches.

MANDAN:

Agronomy - The past week has been favorable for all field work. The temperatures remain below normal. Cultivating of row crops continued during the week and all fallow plots were duckfooted. Most of the feed fields for hay were cut. Drying of hay has been very slow. Small grains are all making rapid progress. Corn is looking better but is backward.

The total precipitation for June 1 to 28, is 2.72 inches, which is below normal for the month.

Maximum temperature, 83°; minimum, 51°; precipitation, 0.04 inch.

Cooperative Grazing Experiment - Pastures continue to improve, but production for the season will not be as much as would be expected for the favorable moisture conditions. Steers show marked improvement for the month they have been on pasture.

Arboriculture - Cultivation and hoeing of nursery fields has continued the entire week. Weeds are growing faster now than at any time previously. The warmer weather has also resulted in a faster tree seedling growth than at any previous time. Suckers have been removed from the pruning experiments. Practically all the tartarian maple in this series have life only at the base which has made necessary the leaving of one new shoot to see if a tree can again be developed.

Damping-off and ants are particularly bad in conifer seed beds this year. The advent of sunny weather may enable the damping-off to be controlled to some extent, but none of the ant exterminators tried are effective. Of those tried, the use of lead arsenate in powder form appears the most satisfactory.

BELLE FOURCHE:

Strong, warm winds during the week have caused a rapid depletion of soil moisture. The ground is cracking badly and all small grains are suffering from lack of moisture. Winter rye, winter wheat, and oats are beginning to burn. Pastures are turning brown and it is doubtful if newly seeded alfalfa, sweetclover, and grasses will make much further growth until after rain is received. Alfalfa and bromegrass were harvested, but the yields of hay on the dry land plots will be light, owing to poor stands obtained in the past few years. Sorgo has made a good growth. Corn is about 8 inches high, but the ground has become quite hard and is beginning to crack.

Maximum temperature, 85°; minimum, 41°; precipitation, 0.04 inch.

ARCHER:

During the past week the weather was cool with considerable cloudiness and a number of local thunder showers. The total precipitation for the week was 0.77 inch and the total to date for June is 1.86 inches which is about the 22-year average.

The grasses, small grains and trees have made good growth and other crops are doing well. Gehu corn is doing better than other varieties.

Work at the station consisted of lining the roadways, cultivating the rotation corn and potato plots and gardens, and tilling 30 acres of fallow land in the dairy fields. When field work was not possible the sheep pasture was fenced.

George Thatcher, Vocational Instructor at Fort Laramie, accompanied by a group of farmers, visited the station June 26.

Maximum temperature, 83°; minimum, 42°; precipitation, 0.77 inch.

AKRON:

No rains to interfere and good progress was made with current field work. Rotary hoe pulled by the tractor did a very satisfactory job on the rotation corn for the first cultivation. Same corn was cultivated for the first time this week end. Corn has started active growth and now stands about 6 to 8 inches tall.

Proso and Foxtail Millet variety experiments seeded during the week. Sorgo and grain millet varieties have emerged to satisfactory stands. Roadways through this project were trimmed and duckfoot

cultivated out. Bean variety experiment has emerged to satisfactory stand. Stands of late spring seeded row crops are satisfactory except kafir on the rotation plots. These were reseeded for the second time this past week.

Small grains have not as yet showed any indication of shortage of moisture, but this showing is expected to develop by appearances this week end. Continued dry weather would mean harvest of the barley plots within two to three weeks.

Maximum temperature, 95°; minimum, 51°; precipitation, 0.18 inch.

NORTH PLATTE:

The week has been drier and with more sunshine than for some time. Humidity has continued rather high however, and alfalfa cured slowly. All crops have made good growth. Rusts have developed rapidly on small grains.

Soil sampling recently showed moisture penetration to depths of 5 to 7 feet on cultivated land and slightly deeper on sod.

Maximum temperature, 88°; minimum, 54°; precipitation, 0.38 inch.

COLBY:

This has been a rainy and generally hot week. The showers revived the weeds which were rapidly depleting the soil of moisture, but they are beginning to suffer again. On clean ground there is now an abundance of moisture for the present needs of row crops.

The fallow plots were all worked this week. The sorghums were cultivated yesterday and to-day. Many weeds had started, but few had made much growth, except on the surface planted plots and along the ridges of a few of the listed plots. The sorghums are making a nice growth. Corn is growing rapidly.

O. R. Mathews, and A. L. Hallsted visited the station the 27th.

Maximum temperature, 102°; minimum, 79°; precipitation, 0.88 inch.

GARDEN CITY:

The season continues very favorable for sorghums and corn planted near the first of June in southwest Kansas. The warm weather has encouraged rapid plant growth, but rainfall has not been heavy enough to store any large reserve of soil moisture.

Corn and sorghums were thinned the forepart of the week and all row crops have been cultivated subsequent to thinning. Tillage operations to be worked immediately after wheat harvest were completed this week. This is about two weeks early but the very heavy weed growth, which was nearing the seed ripening stage, is the reason for hurrying these operations.

A. L. Hallsted and O. R. Mathews visited the station the 28th.

Maximum temperature, 101°; minimum, 59°; precipitation, 0.50 inch.

HAYS:

The weather during the week has been damp due to numerous rains and heavy dews. The temperature has been running a little higher. The damp, warm, quiet weather has been ideal for development of stem rust. The wheat is so thoroughly covered with rust even up to and on the heads, the last hope for worthwhile yields on the plots is gone. Considerable of the straw is breaking at the ground due probably to the drought which continued until after that part of the stem was formed. The wheat

ranges from 12 to 30 inches high. Except for the wheat on rotation 570 it is all very weedy. Even on the better plots the weeds are as high as the wheat and growing very rapidly. The wheat has finished its growth. It is in the milk stage although from a distance it appears to be ripening because of the rust.

The only plot that gives promise of a harvest is the three year fallow. It is a little farther advanced being in the soft dough stage and is free from weeds; it stands well and for looks, is the prize wheat of the country, although it is carrying a load of rust. As for the wheat on other plots there is none that can be harvested with the combine because of the weeds. It is a binder job if harvested at all.

Barley ranges from 15 to 26 inches high, and is 40 per cent headed. Oats are from 12 to 18 inches high and 10 per cent headed. Spring wheat is from 12 to 15 inches high and the earliest heads are just beginning to show above the weeds. All these grains are extremely weedy; the oats are making the best fight for survival. On most plots the oats are still just a little above the weeds. Barley is second best having made a last thrust pushing its heads above the weeds, but the latter are so thick and growing so rapidly it seems doubtful if the barley can be found by the time it is mature. The spring wheat is already hopelessly lost except for occasional heads. At present it looks like there is no chance for any of the spring grains to finish and if they do the bundles that are harvested will be from 40 per cent to 80 per cent weeds.

Corn and kafir stands are good and more rapid growth has started within the last few days. Corn is about 10 inches high and kafir 6 inches. Canada field peas are about 15 inches high with a heavy growth of weeds about the same height.

Thinning of row crops has been in progress all the time the ground has been dry enough for such work but the job is not yet finished. However, the first work done was "block thinning" which has prevented weakening of the plants by crowding.

Except for a couple of days the ground was too wet for cultivation. The tillage was confined to cultivation of row crops. Rains following earlier cultivation of fallow ground and road-ways revived growth of the weeds and as a result everything is weed-covered.

Three rains during the week totaled 1.93 inches on the project and 2.23 inches on the station campus. The Dry Land Project continues drier than other portions of the experiment station.

O. R. Mathews was a visitor at the station Thursday and Saturday afternoon of this week. A trip with Mr. Mathews Friday and Saturday across the country by way of Colby and Garden City revealed the fact that about 40 per cent of the cultivated land has been tilled by plowing or listing, mostly the latter. A large percentage, perhaps 90 per cent of the listed land observed was planted to row crops which generally have emerged to good stands and for the most part are in good condition. The remainder of the land (perhaps 60%) is covered with a heavy growth of weeds. Along the way considerable machinery is at work in the weedy fields. The weeds are so large, plowing is about the only method that can be used satisfactorily.

Maximum temperature, 94°; minimum, 60°.

TUCUMCARI:

High winds, periods of blowing sand, heavy clouds bringing but little precipitation, and normal temperatures have characterized the week. All crops and ranges are badly in need of moisture and row crop seedlings in some portions of the county have succumbed.

Work of the week included completion of harvesting wheat and rye plots, drilling and planting increase land to sorghums, considerable knifing of plots, and thinning plots. About 2/3 of the thinning remains to be performed, and this will be rushed when rain occurs.

Both rowed and drilled increase land planted the first of the week will not show full emergence until rains occur, for it was impossible to place all seed in moist soil. With but few exceptions, stands on station plots are satisfactory.

Maximum temperature, 98°; minimum, 57°; precipitation, 0.46 inch; evaporation, 2.945 inches; wind velocity, 9.1 miles per hour.

DALHART:

This section of the Southern Great Plains retains the distinction of being the area where the drought started and also the last place to receive rains. The area immediately surrounding the station appears to be the immediate center, although much of the north part of Dallam County is still as dry. East of Dalhart and Southeast also bountiful rains and cloudbursts have been rather the rule. Just as an illustration the total rainfall at the station has been 1.63 inches so far this month while a farmer on the Soil Erosion Project 14 miles northeast of Dalhart reports to-day that rainfall on his place has been 6.70 inches. The precipitation on the station has been 4.65 inches so far this year. The native pastures in the immediate area are literally covered at this time with Russian thistles and redroot (Amaranth). The soil is becoming so dry that many of the redroot are already dead and the thistles are drying. Native grass has ceased growth.

The rye plots were mowed during the week. There was less than 10 per cent of a stand on any plot but the rather unexpected feature was the fact that the plants were uniformly distributed and were uniform for height. The stands were not thinned by soil blowing but by drought. The heads were just turning when mowed. There were thin stands of weeds over the plots. No yields were taken on any of the plots. The winter wheat plots were completely killed by an absence of soil moisture three months ago. Early fall tillage for wheat and rye was done during the week. Other work consisted of thinning sorghums, cultivating sorghums, working the vineyard and conifer planting, and miscellaneous fencing and repairs. Thinning has progressed to the stage that the plants are now a trifle small to thin but the season for this work is at hand and if moisture was received this work would have to be rushed. All of the varieties, except the last date of planting, have been thinned and a good start has been made on the rotation plots. There have been ample plants for a stand on all plots but it is feared that rethinning may be necessary on some of the rotation plots later when rains are received. Good emergence has been secured on all crops except the cotton (a few rows) and a few rows of the Soybean Nursery. It has been rather an unexpected event to record a good stand of sweet clover for one of the sweet clover plots on the rotations - even as late as Monday of this week the plot appeared good with the seedling plants some 4 inches high. The absence of moisture has apparently caused all these plants to perish this week.

Maximum temperature, 98°; minimum, 58°; precipitation, 0.18 inch.

BIG SPRING:

Weather has remained very favorable for field work during the week; in fact, this is the first week since early May that field operations have not been delayed for at least a day or more out of each week. Rainfall for the month of June totaled 5.98 inches as compared with a normal of 2.17 inches for this month.

Cotton and feed crops, which were planted last week have emerged to good stands again. It is hoped that these stands can be retained this time for it is too late to plant cotton now with any assurance of it opening before the normal frost date. Replanting increase blocks of hegari, milo and sumac, was completed this week.

The wheat plots were harvested during the week; straw was so short that it was necessary to mow them. The hail of the previous week had destroyed part of it so the yields will be very light.

Maximum temperature, 92°; minimum, 66°; precipitation, 0.18 inch.

WOODWARD:

Another week of bland weather has closed. Two light showers were received totaling 0.42 inch. These insure perfect stands for all row crops. Within a few miles of the station several communities were hailed out. This has occurred frequently over the past 20 years with the station so far undamaged, though perhaps it would be as well not to attract attention to ourselves by mentioning the fact.

A little combining has been done on the station and a little about the country. For the most part, however, farmers are delaying harvest because of the green second growth scattered through all the fields. This would dry up and fall with a few days of hot weather as most of it is dead at the base, but hot drying days have been delayed. Everyone, of course, is fearful of destructive storms while waiting for harvest.

The tree of outstanding ornamental value is the soapberry loaded as it is with large panicles or cream colored blossoms contrasting well with the dark foliage. The mallows, shrub althea, desert willow, various salvias and monarda's, trumpet creepers and China-fleece vine are now coming strongly into bloom.

Work of the week has been devoted to thinning and cultivating plots and finishing late planting.

Maximum temperature, 96°; minimum, 63°; precipitation, 0.42 inch.

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